At the appropriate pages, prior to the text on each page, please delete the header that reads "WO 01/19182 PCT/NZ00/00179" if necessary.

In the Claims:

After entry into the U.S. national stage, and assurance of a U.S. filing date, please revise the claims from the enclosed PCT application as follows.

Please cancel claims 47 and 48 without prejudice and without disclaimer.

Please amend pending claims 3-6, 9, 10, 12, 14, 16-18, 20-24, 26, 27, 30, 32-34, 36-40, 43-45, 49 and 51-55 without prejudice and without disclaimer, so that the rewritten claims read as follows:

3. (Amended) A method as claimed in claim 1, wherein said donor cell population is non-proliferating and has been synchronised at any point in the G1 stage of the cell cycle.

4. (Amended) A method as claimed in claim 1, wherein said G1 cell is segregated at an early G1 phase.

5. (Amended) A method as claimed in claim 1, wherein the donor cell population is non-proliferating and comprises senescent cells.

6. (Amended) A method as claimed in claim 1, wherein said donor cell population is derived from either embryo, fetal, juvenile or adult cells isolated from an animal *in vivo* or from a cell culture *in vitro*.

9. (Amended) A method as claimed in claim 1, wherein the donor cells are adult or fetal fibroblasts or follicular cells.

10. (Amended) A method as claimed in claim 1, wherein said donor cells comprise modified cells.

12. (Amended) A method as claimed in claim 1, wherein the recipient cell comprises an enucleated oocyte.

14. (Amended) A method as claimed in claim 1, wherein the recipient cell comprises an enucleated stem cell or a clump of enucleated stem cells fused together.

16. (Amended) A method of producing cloned animal embryos which comprises transferring a segregated donor nucleus in the G1 stage of the cell cycle into an enucleated recipient cell.

17. (Amended) A method as claimed in claim 16, wherein the donor nuclei are genetically altered to produce cloned embryos having desirable genetic traits.

18. (Amended) A method as claimed in claim 16, when used to produce an animal species of cloned embryo selected from the group comprising birds, amphibia, fish and mammals.

20. (Amended) A reconstituted non-human animal embryo prepared by the method claimed in claim 16.

21. (Amended) A reconstituted non-human animal embryo as claimed in claim 20, comprising a transgenic embryo.

22. (Amended) A reconstituted non-human animal embryo as claimed in claim 20 re-cloned to further increase embryo numbers or which undergoes serial nuclear transfer to aid nuclear reprogramming and/or development.

23. (Amended) A reconstituted non-human animal embryo as claimed in claim 20, comprising a species of mammal selected from the group comprising primates including humans, rodents, rabbits, cats, dogs, horses, cattle, sheep, deer, goats and pigs.

24. (Amended) A method of cloning a non-human animal comprising the steps: (1) producing a cloned non-human animal embryo according to the method of claim 16; (2) allowing a non-human animal to develop to term from the embryo; and (3) optionally breeding from the non-human animal so formed either by conventional methods or by further cloning.

26. (Amended) A method as claimed in claim 24, wherein said cloned non-human animal is a transgenic non-human animal having a desirable genetic trait.

27. (Amended) A method as claimed in claim 26, wherein said transgenic non-human animal is a transgenic bovine or ovine.

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30. (Amended) A cloned non-human animal as claimed in claim 28, comprising a transgenic non-human animal having a desirable genetic trait.

32. (Amended) A cloned non-human transgenic animal as claimed in claim 30, wherein the desirable genetic trait is selected from the insertion, deletion, or modification of a gene or genes enabling the production of pharmaceutical proteins in milk, blood or urine; production of nutraceutical products in milk or meat; production of beneficial agricultural traits to improve the quality of milk, meat and fibre production; improve resistance to pests and diseases; production of industrial proteins in milk; xenotransplantation; and for the generation of transgenic animals as models for human disease.

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33. (Amended) Offspring and descendants of the cloned non-human animal as claimed in claim 28.

34. (Amended) A method of producing an embryonic cell line comprising the steps a) selecting and segregating G1 cells from a proliferating population of donor cells or from a synchronised population of G1 cells or from a population of senescent cells, and transforming a nucleus from such a segregated cell into an enucleated recipient cell; b) growing to blastocyst stage; c) recovering embryonic cells; and d) establishing an immortalised cell line *in vitro*.

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36. (Amended) A method as claimed in claim 34, wherein said donor cells are human cells.

37. (Amended) A method as claimed in claim 34, wherein both donor and recipient cells are human cells.

38. (Amended) A method as claimed in claim 34, wherein the donor cells are adult or fetal cells selected from any karyotypically normal cell type and the recipient cells are selected from any cell type capable of reprogramming gene expression.

39. (Amended) An embryonic cell line produced by the method of claim 34.

A12 cont

40. (Amended) A human embryonic stem cell line produced by the method of claim 35, useful in therapeutic applications.

43. (Amended) A method as claimed in claim 41, wherein both donor and recipient cells are human cells.

44. (Amended) A method as claimed in claim 41, wherein the donor cells are adult or fetal cells selected from any karyotypically normal cell type and the recipient cells are selected from any cell type capable of reprogramming gene expression.

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45. (Amended) Embryonic stem cells produced by the method of claim 41.

A14

49. (Amended) A method of therapeutic cloning, wherein embryonic stem cells are produced according to claim 35 from a donor cell derived from a subject, and cultured to produce

specialised cells or tissue for transplantation in said subject or in another subject in need of such treatment.

51. (Amended) A method of treating a disease, disorder or injury which may be treated by transplantation of specialised cells or tissue, comprising administering to a patient in need thereof a therapeutically effective amount of specialised cells or tissue produced according to the method of claim 49.

52. (Amended) A method as claimed in claim 49, wherein said disease, disorder or injury is selected from various neurological disorders (*eg* Parkinson's disease), diabetes, heart disease, muscular dystrophy, various hereditary diseases, specific cancers (*eg* leukemia), spinal cord injury, burns and other afflictions.

53. (Amended) A method of drug discovery or toxicology testing of drugs using *in vitro* differentiated human embryonic stem cells produced by the methods of claim 41.

54. (Amended) A method of xenotransplantation, wherein cells, tissues and organs are isolated from the non-human cloned animal of claim 28, and used for transplantation in a human patient in need thereof.

55. (Amended) A method of gene therapy, wherein cells, tissues and organs comprise a transgene and are isolated for the non-human cloned animal of claim 30.